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THE GENUS *HALMATHRIPS* HOOD

(THYSANOPTERA, THIRIPIDAE)

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The first specimen of *Halmathrips* was collected in 1917, but no other specimens referable to this genus were found until the discovery of the specimens representing the three new species described herein. Even with the knowledge of three additional species, no information on the host plants of any of the species in the genus can be given. All four species were found after they had been attracted to lights. The genotype was taken from a window pane in Trinidad, and the three species described here were recovered from light traps in Honduras. Males of all are still unknown.

One of the new species, *beckeri*, is sufficiently distinct to be placed apart from the others. Instead of having an eight-segmented antenna and a transversely striate pronotum, as is true in the typical species of *Halmathrips*, *beckeri* has a nine-segmented antenna and nearly all traces of the pronotal striations have disappeared. To separately categorize *beckeri*, the subgenus *Phaosothrips* is proposed.

The specimens designated the types of these new thrips were donated to the Illinois Natural History Survey by Dr. Edward C. Becker. I am much indebted to him for these and many other thrips from Honduras.

Halmathrips Hood

Halmathrips Hood, July 1936, Rev. de Ent. 6(2):248-249. Monobasic; type species by original designation, *Halmathrips citricinctus* Hood.

Tiny, somewhat stocky thrips with short heads, bulged eyes, long antennal styles, with a transverse apodeme across the middle of the pronotum, with but a single submarginal forewing vein. Known only from the American tropics.

Of the genera I have studied, the closest relatives of *Halmathrips* appear to be *Graphidothrips* Moulton (1930, Rev. Chile de Hist. Nat. 34:272-3) and *Dendrothrips* Uzel (1895, Monog. Thysanopt., p. 159). All three genera have similarly formed heads with protruding eyes, short occipital regions, and with the ocellar triangle located well back on the head.

Possibly the common feature of straight instead of wavy fringe setae of the wings indicates a common ancestor for these genera. Straight wing fringe setae is a primitive characteristic, being found in the Aeolothripidae, Heterothripidae, and Phlaeothripidae. These setae are wavy only in the higher groups, that is, the Merothripidae and most genera of the Thripidae.

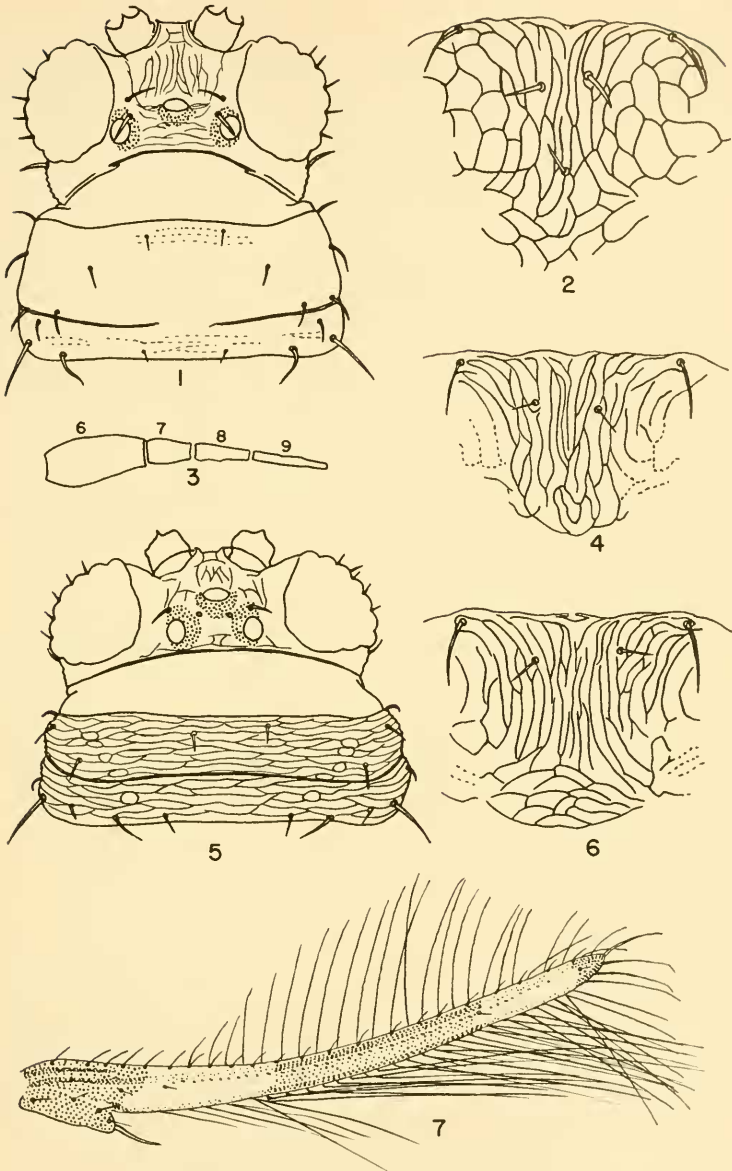
It is likely that *Graphidothrips* should be considered the nearest relative of *Halmathrips*. The form of the antenna of *Graphidothrips stuardoi* Moulton is similar, except for the length of the sense cones, to the type of antenna found in *Halmathrips (Phaenothrips) beckeri*, new species. Both species have the antenna nine-segmented with the terminal segments forming a long style. While not mentioned in Moulton's original description, *Graphidothrips* bears a faint mid-transverse apodeme on the pronotum much in the manner of the species of *Halmathrips*.

In other characters *Graphidothrips* is markedly distinct from *Halmathrips*. The hind tarsi of *Graphidothrips* are extremely long; in length each of these one-segmented tarsi is nearly as long as its respective tibia. In *Halmathrips*, the one-segmented hind tarsus is at the most much shorter than the hind tibia. *Graphidothrips stuardoi* Moulton, known from Chile, feeds on *Vicus*.

A more distant relative of *Halmathrips* is *Dendrothrips*. Like *Graphidothrips* and one species of *Halmathrips*, *Dendrothrips* has nine segments in the antenna. Unlike either of the former genera, *Dendrothrips* does not have the terminal antennal segments formed as a long style. Perhaps most importantly, *Dendrothrips* is set apart from *Halmathrips* and *Graphidothrips* by the lack of a mid-transverse apodeme across the pronotum. The widely distributed *Dendrothrips* contains several species that feed on the leaves of a variety of temperate, deciduous trees and shrubs.

KEY TO HALMATHRIPS

1. Antenna 9 segmented; pronotal surface smooth with hardly any trace of transverse striations, fig. 1 *beckeri*, new species
- Antenna 8 segmented; pronotum distinctly transversely striate, fig. 5 2
2. All abdominal segments brown; forewing with three dark bands, fig. 7 *trilineatus*, new species
- Basal abdominal segments pale yellow to white; forewing with two dark bands 3
3. Forewing tip pale, distal dark band not continuous to the wing apex *citricinctus* Hood
- Forewing tip brown, distal dark band continuous to the wing apex *debilis*, new species



Halmathrips (Phaenothrips) beckeri. Fig. 1, dorsal aspect of head and prothorax; fig. 2, Metanotal striations; fig. 3, outline of terminal segments of right antenna.

Halmathrips (Halmathrips) debilis. Fig. 4, metanotal striations.

Halmathrips (Halmathrips) tricinctus. Fig. 5, dorsal aspect of head and prothorax; fig. 6, metanotal striations; fig. 7, right forewing.

Halmathrips Subgenus **Halmathrips** Hood

Head broad and short, mouthcone blunt when viewed from above, extending across the prosternum; posterior of head with a thickened, dorsal ridge. Eyes strongly protruding anteriorly and laterally, extended posteriorly more on the ventral surface than on the dorsal surface of the head. Antenna eight-segmented with forked sense cones on third and fourth segments. Maxillary palp two-segmented. Pronotum short and broad, closely, transversely striate, with but a single pair of major setae which are placed one on each of the posterior angles, with a complete, transverse apodeme across the middle. Mesosternellum fused to metasternum so that no suture is present between the meso- and metasternum. Tarsus with but one segment, each hind tarsus with a pair of stout spurs. Forewing with but one main submarginal vein on which there are few setae, fringing setae not wavy. Most abdominal tergites, at the sides, with transverse striae which are finely subdivided by minute, longitudinal ridges, median portions of abdominal terga, except tergum one, without sculpture. Part of the eighth abdominal tergum and all of the ninth and tenth tergites with microtrichiae, most abdominal sternites transversely striate like pronotum, tenth abdominal segment rectangular, not pointed, and undivided dorsally.

Halmathrips (Halmathrips) citricinctus Hood

Halmathrips citricinctus Hood, July 1936, Rev. de Ent. 6(2):249-252, fig. 1. Type locality: Verdant Vale, Trinidad, B.W.I.

This, the type species, is known only from a single female specimen. It is described as being bicolored brown and yellow, with reddish, subintegumental pigments. Judging from the illustrations, the wings of *citricinctus*, which have only two dark bands, are less out-curved than are the wings of the other species of the genus.

Halmathrips (Halmathrips) tricinctus, new species

Figs. 5, 6, 7

Female (macropterous).—Length, distended, exclusive of the antennae, about 0.75 mm. General color light brown and bright red. Light brown: head, prothorax, abdomen, basal segments of the antennae, the legs, except the tips of the tibiae and all the tarsi, three bands on each of the forewings, fig. 7, and the central portion of the trailing edges of the hindwings. Pale brown to colorless: terminal segments of the antennae, tips of tibiae, all of tarsi, two bands on the forewing, fig. 7, and most of the hindwing. Yellow: subintegumental pigments of the central portions of the head, thorax, and abdomen. Bright red: subintegumental pigments around the ocelli, on sides of thorax, sides of the abdomen, and a line along the veins of the forewings.

Head as in fig. 5; outer fork of sense cone of the fourth antennal segment long, extending beyond the fifth antennal segment. Prothorax as

in fig. 5; metanotum sculptured as in fig. 6. Forewings as in fig. 7, slightly out-curved. Abdomen as for genus, medial portion of the first abdominal segment strongly marked with striae; comb on eighth abdominal segment complete, preceding segment combs incomplete, being reduced to small, medial combs on second to sixth segments.

Types.—Holotype ♀, La Ceiba, Honduras, June 12, 1949, in light trap (E. C. Becker); 2 ♀ paratypes, same data as for holotype, except May 22, 1949, and June 17, 1949.

Halmathrips (Halmathrips) debilis, new species

Fig. 4

Female (macropterous).—Length, distended, exclusive of the antennae, about 0.6 mm. Bicolored light yellowish brown and white. Light brown: head, thorax, sixth to tenth abdominal segments, basal segments of the antennae, basal segments of the legs, a band at the base of the forewing including the scule, and another band on the apical half of the forewing. Pale white to colorless: apical segments of the antennae, terminal segments of the legs, first to fifth abdominal segments, a submedian band on the forewing, and most of the hindwings. Bright red: sides of the thorax, sides of sixth to eighth abdominal segments, and the basal edges of the forewings.

Head similar to fig. 5. Outer fork of the sense cone of the fourth antennal segment about as in *citricinctus*, not extended much beyond the middle of the fifth antennal segment. Prothorax similar to fig. 5. Metanotum sculptured as in fig. 4. Forewings less out-curved than *tricinctus*, more as in *citricinctus*. Medial portion of first abdominal segment weakly marked. Comb on eighth abdominal segment complete.

Type.—Holotype ♀, La Ceiba, Honduras, June 7, 1949, in light trap (E. C. Becker).

Halmathrips Subgenus Phaothrips, new subgenus

This subgenus differs from the typical subgenus by the following characteristics:

Head not so short nor so broad; dorsal surface of eye prolonged posteriorly slightly farther than that part of the eye that is ventral; antenna nine-segmented, fig. 3, instead of eight-segmented; striae of pronotum and abdominal sterna nearly lost; ocellar triangle spread out more on the head; transverse, pronotal apodeme interrupted in the middle.

Type species.—*Halmathrips (Phaothrips) beckeri*, new species.

Halmathrips (Phaothrips) beckeri, new species

Figs. 1, 2, 3

Female (macropterous): Length, distended, exclusive of the antennae, about 0.95 mm. Generally bicolored, brown and white. Brown: head, thorax, all of first to third and sixth and seventh antennal segments and basal three-fourths of fourth antennal segment, most of segments of

the first two pair of legs, the forewings, a median spot on first to seventh abdominal terga which tends to widen until on eighth segment it nearly covers the entire tergum, and covers all of ninth and tenth segments. Pale yellow to white: tip of fourth antennal segment and all of fifth, eighth, and ninth, all tarsi, all of the hind legs and venter and portions of the sides of the terga of the abdomen except on segments nine and ten. Vivid red: subintegumental pigments of the first four antennal segments, ocellar pigments, extensive areas of the thorax, and traces in abdomen in the areas of the dark spots. This red often fades to orange in the thorax and in the abdomen.

Head as in fig. 1; outer fork of sense cone of fourth antennal segment extending only to a point midway of the fifth segment. Prothorax as in fig. 1. Metanotum sculptured as in fig. 2. Forewing with about 9 or 10 setae along the submarginal vein. Median portion of first abdominal segment weakly marked. Comb on eighth abdominal segment complete.

Types.—Holotype ♀, La Ceiba, Honduras, June 11, 1949, in light trap (E. C. Becker); 2 ♀ paratypes, same data as for holotype; 2 ♀ paratypes, same data as for holotype except May 21, 1949.

SOME INTERESTING CHINESE SPECIES OF GLOSSOSOMA

(TRICHOPTERA, RHYACOPHILIDAE)¹

BY HERBERT H. ROSS² and CHI-LING HWANG³

Among some miscellaneous Chinese caddisfly material in the collections of the Chicago Natural History Museum and the United States National Museum were found specimens of three new species of *Glossosoma*, closely allied only to the Chinese species *minutum* Banks. All four are unusual in lacking specialized male characters which would place them in any of the known groups of the genus, and characterize the species as persistent forms of phyletic lines more primitive than any heretofore described. They may be related to the Tibetan subgenus *Lipoglossa* Martynov, but since we have not studied material of this genus no definite comparison with it can be made. We feel that until the relationship of these particular Chinese species to *Lipoglossa* can be made clear, it is better not to describe new subgenera to accommodate the Chinese forms, but rather simply to state that they represent the simplest known forms in the genus.

¹This paper is a joint contribution from the Section of Faunistic Surveys and Insect Identification, Illinois Natural History Survey, and the Department of Entomology, University of Illinois.

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